# THE JURASSIC CHAETETID, *BLASTOCHAETETES BATHONICUS* J. C. FISCHER, IN ENGLAND

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ABSTRACT

Three English occurrences are listed of *Blastochaetetes bathonicus* Fischer, a species abundant in the French Bathonian east of the Paris Basin. It is suggested that their location, rarity and growth-forms may be due to migration, south of the Ardennes–London landmass, into less favourable conditions in the Cotswold area of southern England.

The post-Palaeozoic chaetetids were monographed by J. C. Fischer (1970). He discussed the structures and classification of these somewhat problematic calcified radial-tubular colonial organisms in detail, and compared them with bryozoa, tabulates and stromatoporoids, concluding that they were referable to the Hydrozoa (Coelenterata ; Cnidaria). His species *Blastochaetetes bathonicus* (Fischer 1965, 1970) occurs commonly in the Middle Bathonian of the Aisne and Ardennes in northern France, and is also recorded from Haute-Marne and the Côte-d'Or ; all these areas are in the Jurassic outcrop east of the Paris Basin. In Aisne and Ardennes the fossil is abundant in the 'Calcaires pseudo-oolithiques supérieurs', in which it forms characteristic banks or beds at some levels. Commonly it is accompanied by algal oncolites in a coarse-grained calcareous rock, suggesting that it flourished during life in agitated waters (Fischer 1969a, 1969b).

In England it appears to be a rare fossil, and only three occurrences are known to me, all Bathonian ; two are in Gloucestershire, and one near Bath (Elliott 1972, 1974). These records are now given in detail.

1. Great Oolite, probably near top of White Limestone. Tiltup's End, Nailsworth, Glos. For description of this old quarry, now overgrown, see Witchell (1886) and Woodward (1894 : 270). The specimen is in the British Museum (Natural History) Dept. of Palaeontology, registered number R 49314, Witchell Collection.
2. Great Oolite, probably near top of White Limestone. Limekiln Pit, Royal Agricultural College, Cirencester, Glos. Another old exposure (Woodward 1894 : 282). BM(NH) Dept. Palaeont. reg. no. R 49313, Hinde Collection (? *ex* Tomes Collection). Plate 2, figs 1–3.
3. Great Oolite, Upper Rags, Bed 3 of Elliott (1974). Bathampton Down, east of Bath, Avon (formerly Somerset). BM(NH) Dept. Palaeont. reg. no. R 49603, G. F. Elliott Collection. Plate 2, fig. 4.

In thin section all three specimens show the characteristic internal structures and approximate dimensions as given in full detail by Fischer (1970 : 179) ; the amber-coloured tube-walls with fibrous 'jet d'eau' or feather-structure are beautifully preserved. The external growth forms, however, are very different. The Tiltup's

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End specimen is a compact hemispherical growth exactly like that given as typical for the species by Fischer (1970 : fig. 20a, b), but is a small example (diameter 30 mm, as opposed to an average of 40 mm, maximum 120 mm, in the French material), No matrix remains. The Cirencester example is larger (approximate diameter 55 mm), higher-domed, and in section is seen to be grown round a coral nucleus of 15 mm diameter. It is interesting that this nucleus is almost completely altered to clear crystalline calcite, traces of identifying coral-structure surviving only at the margins, in contrast to the excellent preservation of the enveloping *Blastochaetetes*. The whole specimen is in a white pseudoolitic rock. Finally the Bathampton example occurs as thin irregular spreads, possibly crusts, of less than 10 mm thickness ; they are in an ochreous organic-rubble limestone with brachiopods, sponges, molluscs, echinoderms and bryozoa, whole and broken. The rock is interpreted as a current-accumulated deposit (Elliott 1974). This 'spreading' *Blastochaetetes* is regarded as a growth form only, for the Tiltup's End and Cirencester examples both contain old external surfaces heavily overgrown by later developments of the same organism.

The obvious and shortest migration-route in Bathonian times, from the colonies of the Aisne–Ardennes where the species flourished, was westwards in suitable facies south of the Ardennes–London landmass, and so to the clear-water calcareous site of the present Cotswolds in England. The areas to both north and south of this were in different facies. The species did not become abundant in England, and presumably did not survive into the changed conditions indicated by the overlying Forest Marble facies (Upper Bathonian). The recent 'Tentative reconstruction of the palaeogeography of part of southern England at the end of White Limestone times' (Palmer & Jenkins 1975 : fig. 6) indicates the Cotswold area as offshore-current marine. The numerous small facies-changes seen there in the actual rocks at about this level, as well as the rare varied growth forms of *B. bathonicus*, may well be evidence of less favourable conditions for the species than those which existed in France.

*Note.* Hartman & Goreau (1972), after a comparison with living Sclerospongiae, regarded the Chaetetida as extinct sclerosponges.

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PLATE 2

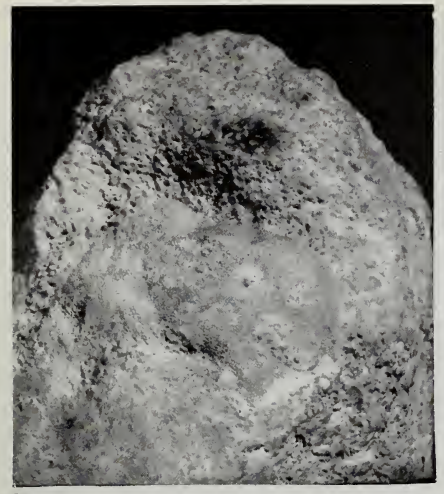
***Blastochaetetes bathonicus*** J. C. Fischer

Fig. 1. Solid specimen, 'cauliflower-head' growth embedded in matrix, × 2. M. Jurassic, Great Oolite (Bathonian); Limekiln Pit, Royal Agricultural College, Cirencester, Glos. BM(NH) Dept. Palaeont., reg. no. R 49313.

Fig. 2. The same specimen; thin section, × 15, showing radial growth with old outer surface overgrown by a differently orientated second growth.

Fig. 3. The same specimen; portion of outer surface, × 15.

Fig. 4. Thin section of a spreading or laminar growth, × 15. M. Jurassic, Great Oolite (Bathonian); Bathampton Down, near Bath, Avon. BM(NH) Dept. Palaeont., reg. no. R 49603.



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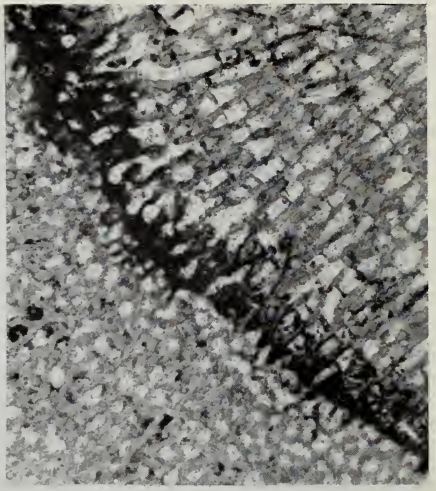

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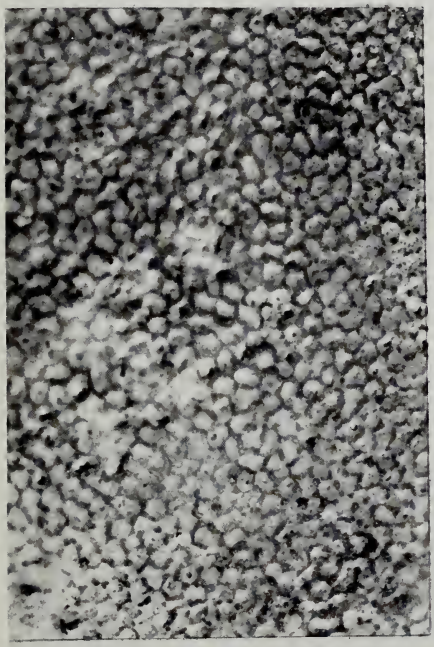

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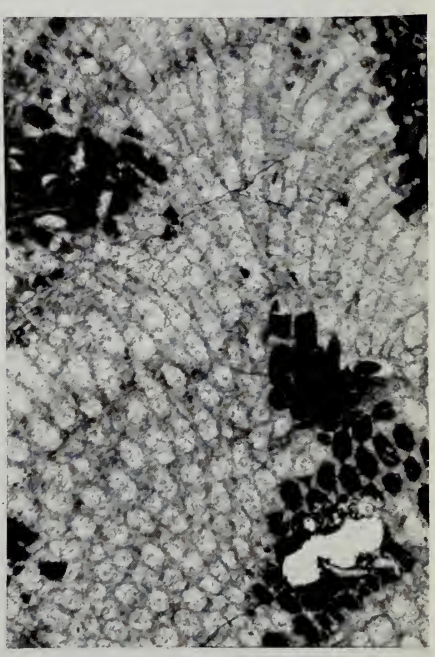

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